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50X1-HUM

Total weight when fully rigged, with crew: 9,000 kilograms
Specific pressure on ground: 0.4 kilogram per square centimeter

The amphibian has a metal waterproof body, a screw propeller, and a 3-ton, two-drum winch. The caterpillar track, winch, and propeller are all driven from the transmission box. Originally, it was designed with a view to mechanizing the labor-consuming operations of floating loose timber. In the course of testing, it proved equally effective in disentangling congested log piles, rolling logs into water, raising sunken timber, and transporting loads. Its productivity in these operations is shown in the table below:

Operation	Output (cubic meters)			Increase in Labor Productivity
	By Amphibious Tractor		By Hand	
	Per Machine-Shift	Per Man-Day	Per Man-Day	
Disentangling logs up to 2.5 meters thick	1,200	240.0	100.0	2.4 times
Rolling dried logs from bank into water over a distance of 150 meters	22	7.2	2.1	3.4 "
Rolling dried logs on a chute into water over a distance of 200 meters	40	8.0	1.7	4.7 "
Disentangling logs buried in sand on the bank	36	12.0	2.6	4.7 "
Raising sunken timber	20	6.7	2.6	2.6 "

The amphibian has great mobility both on roadless land and on water, and can reach places, otherwise inaccessible, to break up log congestion. The different operations are performed by the traction winch which is mounted on the amphibian. In log-jam operations, the winch is aided by a pulley block which is mounted on the timber, and the towline is drawn backwards.

To clear a river bank of dried or sunken timber, ordinary skidding lines are fastened to a hook on the amphibian. The tractor can pull a batch of logs of up to 3 cubic meters on the ground, and up to 5 cubic meters on a chute.

The amphibian can descend into and get out of water at a bank incline of 30 percent. On land, it can move at a 40-degree angle. It can easily bridge small trenches, ride over logs and small obstacles, and move among brush and light timber.

At a depth of 1.3 meters, the amphibian moves along the bottom on its caterpillars, and at greater depths by means of the propeller. During tests, it passed over dozens of kilometers of roadless land, water stretches, and river bars. Although it performed intensive work in timber floating, it withstood all shocks without damage to any of its parts. Its floatability is adequate and it is steady in fast waters.

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The amphibian has a number of shortcomings, however. Its parts are uneven in strength. The track shoes and rollers come from different types of machines and, therefore, do not fit. During the testing, the shoes often slipped from the rollers. The engine's cooling system is inadequate. The engine is located in the body and the air supply to the radiator is inadequate. The winch drum is placed a little high, which causes the nose of the amphibian to rise during the operation of the upper drum.

However, in a more recent design, the VL-3, based on standard KT-12 tractor parts and units of other standard machines, these shortcomings have been eliminated. Moreover, improvements have been made in the structure of the body. In appearance, the VL-3 differs little from the VL-1, but the difference in parts is considerable.

The length of the VL-3 has been increased to 7.5 meters and the width reduced to 3.15 meters, which makes it more maneuverable on land. The new model will have a log-shover, patterned after that of the light bulldozer. It will be raised by a winch and will descend by its own weight. The speed of the new amphibian is expected to be 9-10 kilometers on land and 12 kilometers on water. Like the KT-12 tractor, it will have five forward speeds and one reverse. The levers controlling the transmission of power to the driving wheels of the rear axle, winch, propeller, and auxiliary winch of the log-shover will be located in the driver's cabin, which is taken from the KT-12 tractor.

Two models of the amphibian will be tested this year, and it will then be decided whether it will go into series production.

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